

## IN THE CLAIMS

1. (Currently amended) A device for comparison, which is designed to receive a first input signal and a second input signal, and to emit a control signal, which is representative of a frequency difference which exists between the first and second input signals, including:

a phase/frequency comparator, which is designed to ~~receive~~sample the first and second input signals, and to emit a first regulation signal;

a lowpass filter responsive to the first regulation for producing a filtered first regulation signal;

at least two current sources, each of which is designed to emit a charge current, with a value which is variable according to the filtered first regulation signal; and

a capacitive element, which is designed to have the charge current pass through it, and to generate the control signal;

wherein the phase/frequency comparator is designed such that the first regulation signal comprises a succession of pulses, each of which has a width which is modulated according to the frequency difference which exists between said first and second input signals.

2. (Original) A device for comparison as claimed in claim 1, wherein the phase/frequency comparator includes a flip-flop RS, the inputs of which for setting to one and to zero are piloted respectively by the first and second input signals, and an output of which is designed to emit the control signal.

3. (Previously presented) A device for comparison as claimed in claim 2, wherein the phase/frequency comparator includes:

a first and a second detector for active edges of the first and second input signals respectively, the outputs of which are connected to the inputs for setting to one and to zero of the flip-flop RS; and

means for re-initialization of the first and second detectors, which are designed to deactivate one or the other of the detectors, when the active edge which it has detected has been taken into account by the flip-flop RS.

4. (Currently amended) A frequency synthesizer, including:

an oscillator, which is designed to emit an output signal with an oscillation frequency which is controlled by means of a control signal; and

a device for comparison, which is designed to receive a first input signal and a second input signal and to emit the control signal that is representative of a frequency difference between the first and second input signals, the first and second input signals comprising the output signal of the oscillator and a reference signal, respectively, the device including:

a phase/frequency comparator, which is designed to receive ~~receive~~ sample the first and second input signals and to emit a first regulation signal;

a lowpass filter responsive to the first regulation signal to produce a filtered first regulation signal;

at least two current sources, each of which is designed to emit a charge current with a value that is variable according to the filtered first regulation signal; and

a capacitive element, which is designed to have the charge current pass through it and to generate the control signal;

wherein the phase/frequency comparator is designed such that the first regulation signal comprises a succession of pulses, each of which has a width that is modulated according to the frequency difference existing between the first and second input signals.

5. (Original) A frequency synthesizer as claimed in claim 4, which also includes a programmable divider, which is inserted between the oscillator and the device for comparison.

6. (Currently amended) A device designed for reception of radio signals, including:

an input stage, which is designed to receive a radio signal, and to convert the radio signal into a first output signal, with a frequency known as a radio frequency;

a frequency synthesizer including

an oscillator, which is designed to emit a second output signal with an oscillation frequency, the oscillator controlled by means of a control signal; and

a device for comparison, which is designed to receive a first input signal and a second input signal and to emit the control signal that is representative of a frequency difference between the first and second input signals, the first and second input signals comprising the output signal of the oscillator and a reference signal, respectively, the device including:

a phase/frequency comparator, which is designed to receive the first and second input signals and to emit a first regulation signal;

a lowpass filter responsive to the first regulation signal to produce a filtered first regulation signal;

at least two current sources, each of which is designed to emit a charge current with a value that is variable according to the filtered first regulation signal; and

a capacitive element, which is designed to have the charge current pass through it and to generate the control signal;

wherein the phase/frequency comparator is designed such that the first regulation signal comprises a succession of pulses, each of which has a width that is

modulated according to the frequency difference existing between the first and second input signals; and

a mixer, which is designed to receive the output signals of the input stage and of the frequency synthesizer, and to emit a signal with a frequency which is equal to a difference between the radio frequency and the oscillation frequency.

7. (Currently amended) A method for controlling an oscillation frequency of an oscillator with controlled voltage, said method comprising the steps of:

sampling first and second input signals and processing sampled values to produce a first regulation signal.

processing ~~a~~ the first regulation signal, comprising a succession of pulses, each of which has a width which is modulated according to a frequency difference which exists between a first and a second signal, said processing including lowpass filtering the first regulation signal to produce a filtered first regulation signal;

using the first filtered regulation signal in order to control at least two current sources, each of which is designed to emit a charge current; and

using as a control signal, a voltage which is generated by a capacitive element, through which the charge current passes.